

## **DRAFT FINAL**

# Site Investigation Work Plan Santa Fe Road Disposal Site County of San Joaquin



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**Snyder Sanitary Dump Site 39-CR-0031**  
**Bill Lane Dump Site (IDS) 39-CR-0001**  
**Lynch Site (IDS) 39-CR-0040**

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# 1. Introduction

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The California Integrated Waste Management Board (CIWMB) Closed, Illegal and Abandoned Site (CIA) program, in accordance with California Public Resources Code (PRC) Section 45013, ET seq., investigates CIA disposal sites. The CIA program provides and develops site data and documentation to quantify requirements for both enforcement and potential clean-up activities by the CIWMB Solid Waste Cleanup Program (AB 2136). The scope of enforcement and remediation work that may be conducted by the CIWMB and/or its designated contractor(s), or referral to either the Regional Water Quality Control Board (RWQCB) or the Department of Toxic Substances Control (DTSC), will be dependent upon the characterization of the waste located at the site, the results of analysis derived from intrusive or non-intrusive investigation, and determination of the presence or absence of hazardous materials.

This Work Plan is focused upon the Bill Lane Illegal Disposal Site, the Lynch Illegal Disposal Site, and the Beard Property, all of which are co-located on Santa Fe Road in the County of San Joaquin. For the purpose of this report, the project will be referred to as the **Santa Fe Road Illegal Disposal Site**.

Typically, burnsites contain heavy metals such as lead, nickel, cadmium, chrome and zinc, although other metals such as copper, iron and aluminum may also be present. Other constituents of concern may be total petroleum hydrocarbons (TPH) as benzene, toluene, ethylbenzene and xylene (BTEX) or diesel, organochlorine pesticides, polychlorinated biphenyls (PCBs), Dioxins and Furans.

## 1.1. Site Location and Description

The Bill Lane Illegal Disposal Site, the Lynch Illegal Disposal Site, the Beard property, and the Waller property are contiguous properties that are located upon the site that was formally the Snyder Sanitary Dump Site (See Following Figures 1-5).

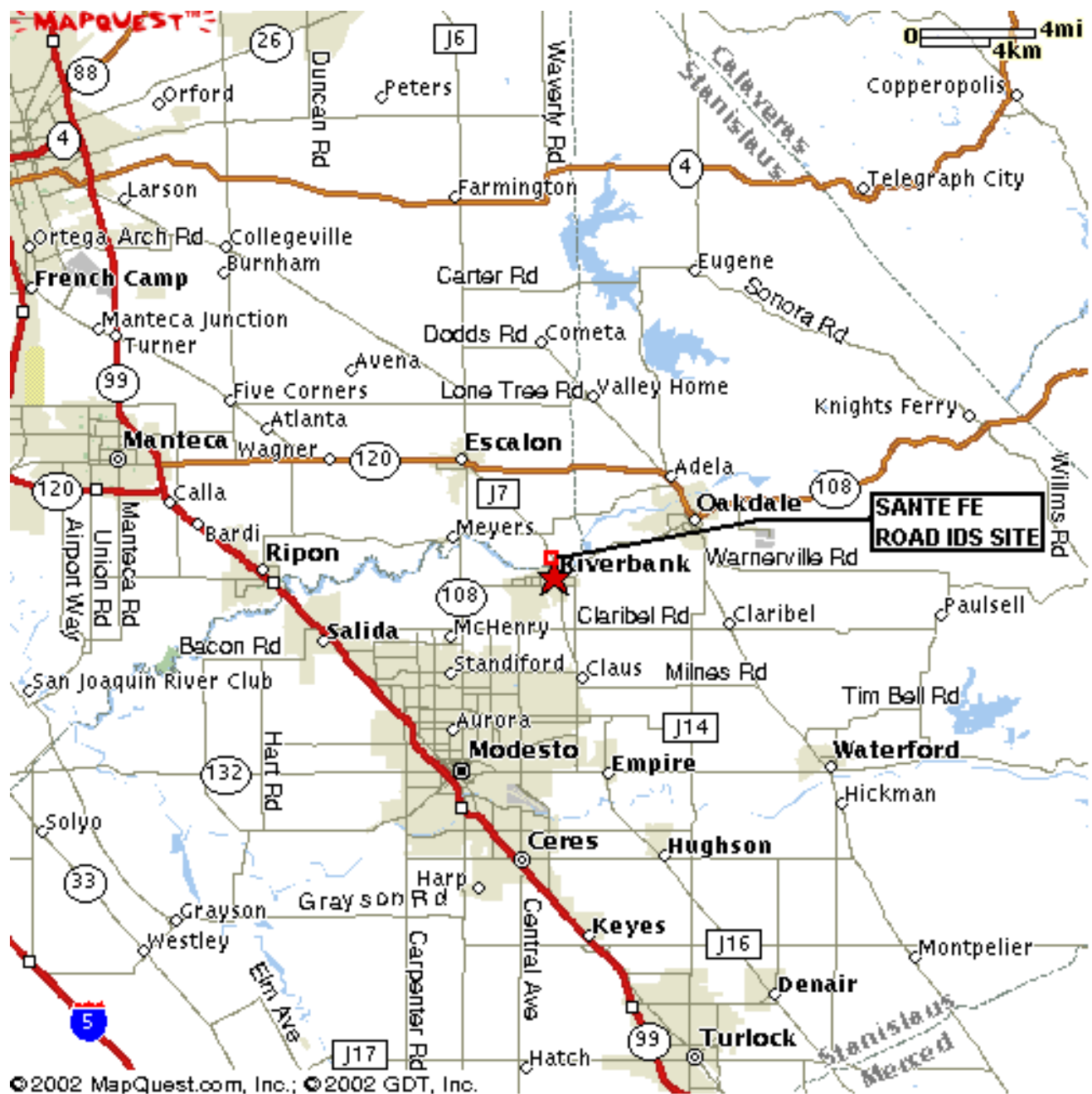
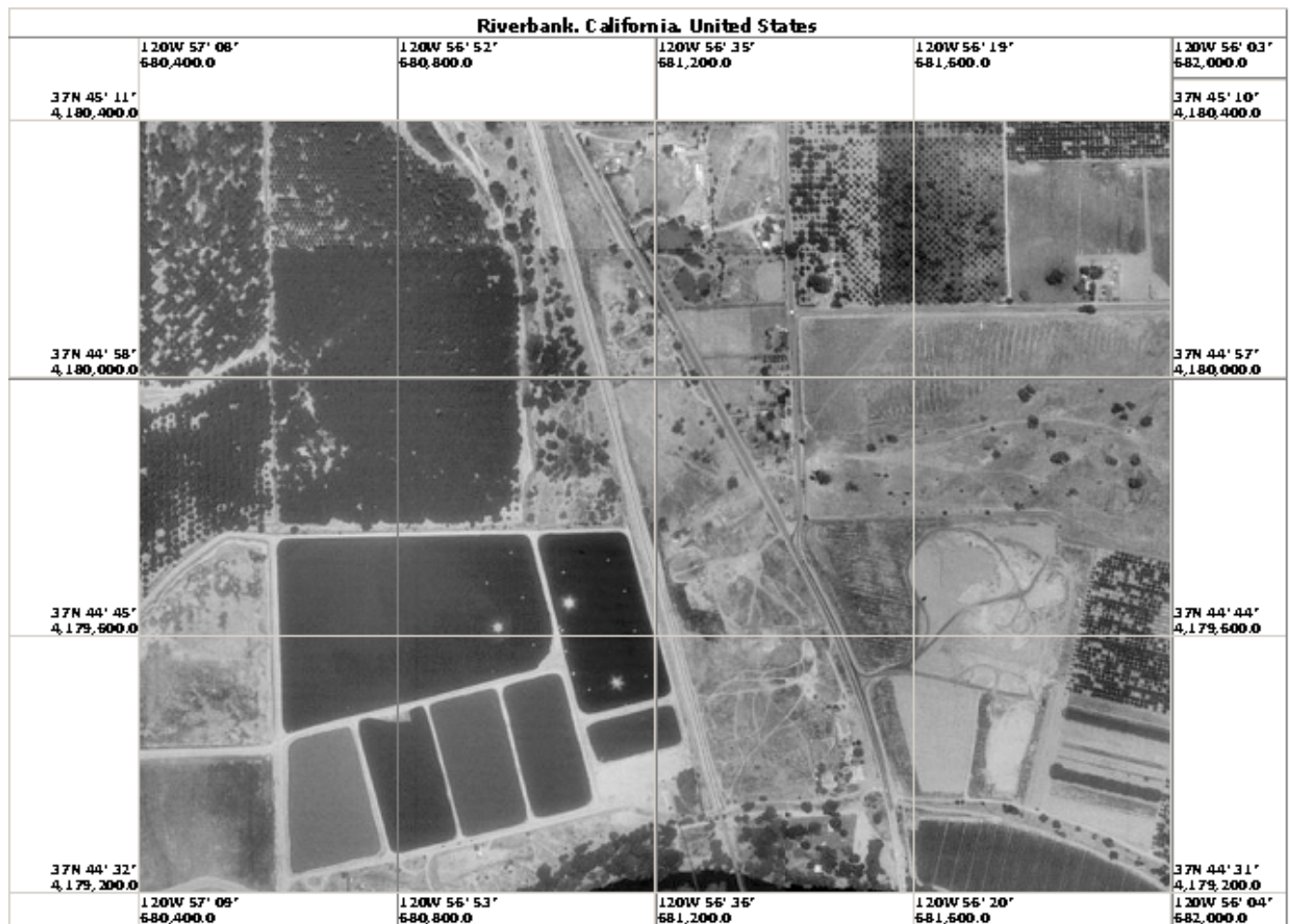


Figure 1. Location Map



**Figure 2. Local Vicinity Map**



**Figure 4. Santa Fe Road Aerial (1993 USGS Aerial Photo, Source: MSN Terraserver)**

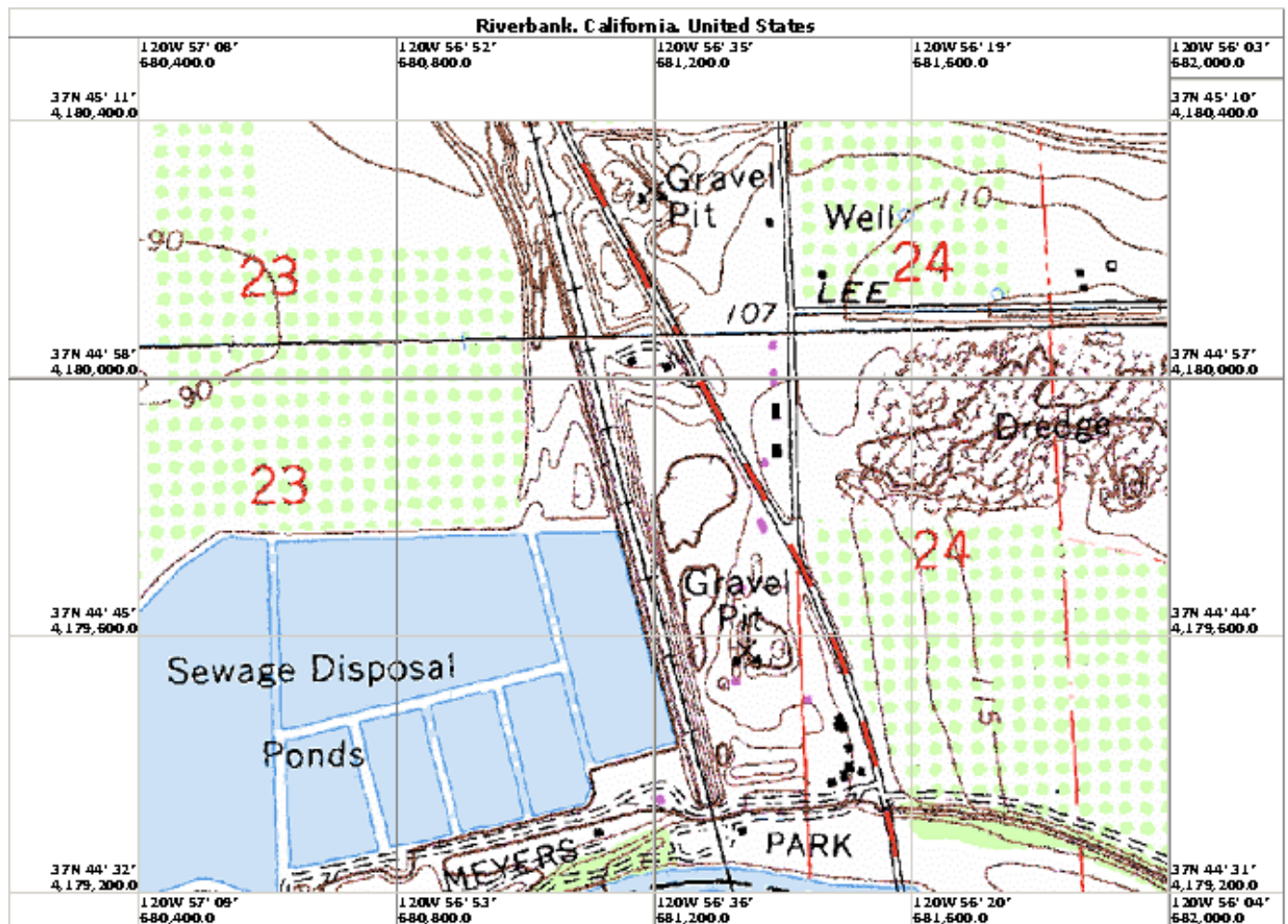
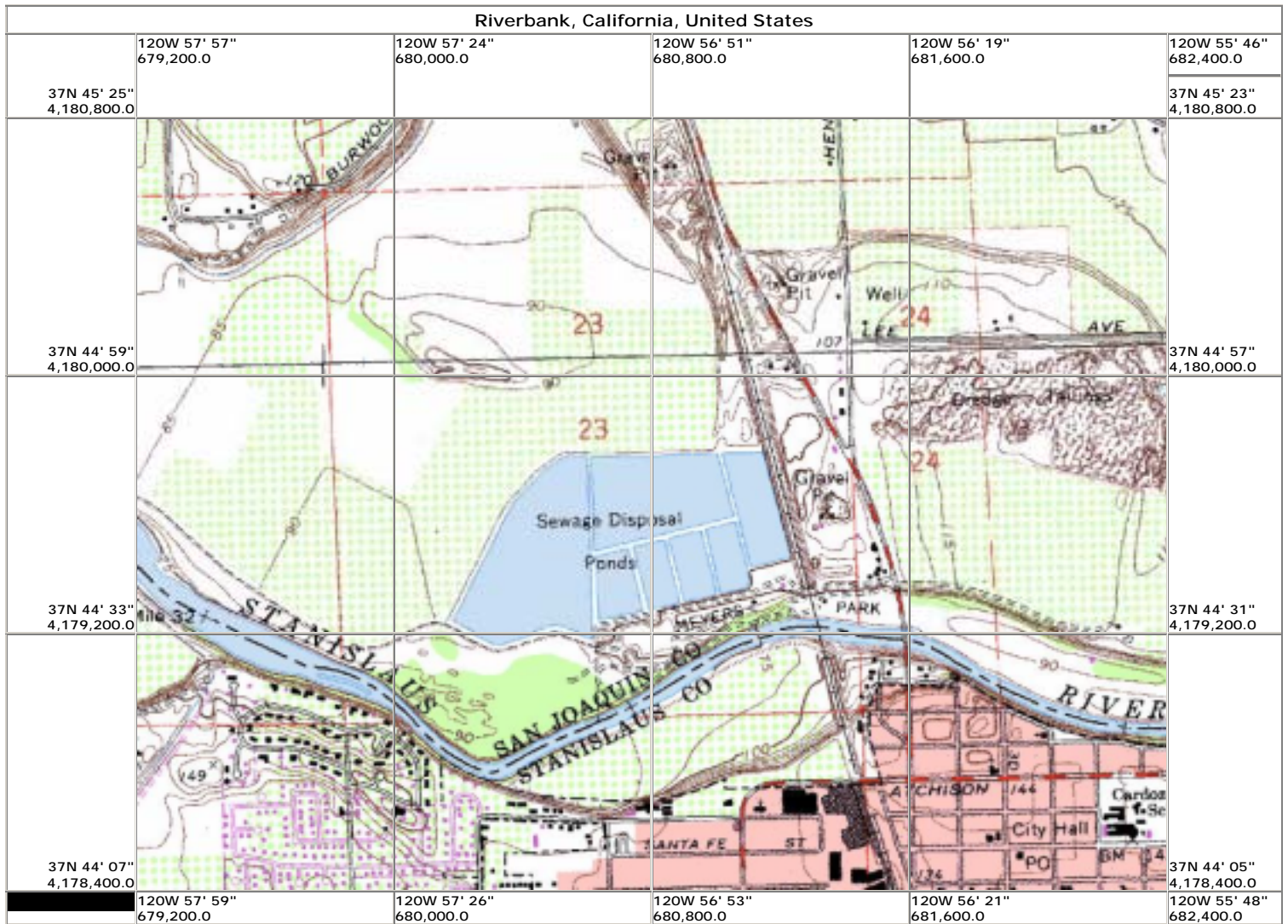


Figure 4. Santa Fe Road USGS Topographic Map (Source MSN Terraserver)





**Figure 5. Santa Fe Road USGS Topographic Map (Source: MSN Terraserver)**



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Note: For purposes of clarification the Snyder Sanitary Dump site will also be described in this section of the document.

<u>Illegal Disposal Site (IDS) Name</u>	<u>Situs Address/ Assessor Parcel Number (APN)</u>	<u>Solid Waste Identification System Number</u>
Snyder Sanitary Dump Site (closed site)	23201 South Santa Fe Road County of San Joaquin	39-CR-0031
Bill Lane IDS (illegal disposal site)	23201 South Santa Fe Road County of San Joaquin APN 249-060-14	39-CR-0040
Lynch IDS (illegal disposal site)	23023 South Santa Fe Road County of San Joaquin APN 249-060-13	39-CR-0001
Beard Property	23701 Santa Fe Road County of San Joaquin APN 249-060-12	39-CR-0031
Waller B. I. ETL LF ESTS (Mick Waller)	22865 S. Henry Road Escalon, CA 95320 APN 249-060-10	39-CR-0031

#### Snyder Sanitary Dump Site

The Snyder Sanitary Dump is a closed disposal site, 60 acres in size and is located on a former gravel pit mining operation site. The property was bounded by private property on the north, Henry Road on the east, private property on the south, and the [Santa Fe Rail Road](#) on the west. The site was eventually bisected by Santa Fe Road.

Based upon a report from the State of California Department of Public Health Bureau of Vector Control, dated November 21, 1956, the disposal site accepted mixed refuse and rubbish, cannery waste, and apricot and peach pits. The pits were dried, recovered, and removed from site, although some quantities were included in with disposed waste and was covered. Salvaging of rags, bottles, metals, etc. took place as part of the waste disposal operation. Quantities of waste handled per day were two loads of mixed refuse, two loads of cannery waste, and three loads of pits. The depth of fill was two feet. At this point it is unclear as to the actual footprint of the waste disposal operation site, although because the site was operated as a gravel mining pit, that any filling of the pit to grade would constitute

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non-native materials (solid waste or soil and rock). Thus far it has been determined that the Snyder site was closed in 1960, per Robert McClellon, County of San Joaquin, Public Health Services, Environmental Health Division, and subsequently sold in various sized parcels. It is also unclear as to the length of time that waste disposal operations occurred (although it is suspected that filling of the pit began after operation as a gravel pit (1940) and ended before the time the property was subdivided (1960)).

#### Bill Lane IDS

The Bill Lane Illegal Disposal Site is currently owned by Franklin Atkins, et al. The mailing address is 196 Tiffany Circle, Ripon, CA 95366. The property is 10 acres in size and is generally square in shape. The site is bounded by the Lynch IDS on the north, Santa Fe Road on the east, private property on the south, and the Santa Fe Rail Road on the west. The site is poorly graded with inadequate drainage control. Along the western perimeter, there are mounds of covered waste which have trenches dug into them and that show evidence of construction and demolition waste. Additionally, there is evidence of yard waste near the center of the property.

#### Lynch IDS

The Lynch IDS is currently owned by Delta Funding, LTD, PTP, C/O Cal State Home Loans, P.O. Box 7636, Stockton, CA 95207. The property is 16.08 acres in size. It is triangular in shape, with the apex at the northern point. The site is bounded by Santa Fe Road on the east, by the Bill Lane IDS on the south, and by the Santa Fe Rail Road on the west. The site is poorly graded with inadequate drainage control. A trench has been dug along the southern and eastern boundaries and across the northern apex point. Investigation of the site shows evidence of the following waste types: camper shell molds, spoils of municipal solid waste and peach/apricot pits within the trench, wood piles, 55 gallon drums, construction and demolition debris, burned tires, and a burn pile of rubbish, with the appearance of fiber glass, and metals.

#### Beard Property

The Beard property is owned by Jon W. Beard, mailing address is P.O. Box 739, Empire, CA, 95319. The property is 10.00 acres in size. It is generally square in shape, with a joggled boundary line on its eastern border. The property is bounded by the Lynch IDS on the north, private property and a segment of Santa Fe Road on the east, private property on the south, and the Santa Fe Rail Road on the west. The site is poorly graded and generally flat with inadequate drainage control. The northern most portion of the property is strewn with shards of glass, metal, crushed asphalt, and concrete. Per, Robert McClellon, LEA for San Joaquin County, there were mounds of dirt that were excavated to a generally level topography. It is believed that the mounds consisted of solid waste materials.

*Note that further investigation may reveal the presence of other types of waste in the sites above.*

*Note that a former owner, Mr. William Lane, now deceased, had conducted illegal dumping operations on the above referenced sites from the 1970's into the late 1990's. This issue will be discussed in the "Previous Investigations" segment of this report.*

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## Waller Property

The Waller property is owned by B. I. Waller ETL. FF ESTS (APN 249-060-10). It is 17.4 acres in size. It is bounded by Santa Fe Road on the east, Henry Road on the west, and private properties on the north and south.

## **Site Security**

Site security includes: Wire fencing on all sides of each of the Lane and Lynch sites and the Beard property. The Lynch site, which is adjacent to the northern boundary of the Lane site, has a trench, approximately four wide by four feet deep, that runs along its southern boundary line, then along its eastern boundary line and across the apex of its north boundary point. The Lane site has a gated access from Santa Fe Road on its eastern boundary line.

## **1.2. Project Background**

The Closed, Illegal, and Abandoned Disposal Sites (CIA) Section was contacted by the Local Enforcement Agency (LEA) for the County of San Joaquin, in February 2001 via phone call from Robert McClellon to Glenn Young, CIA section supervisor. The LEA requested assistance in determining the status and investigation, and possible remediation of the illegal disposal sites located at Santa Fe Road, County of San Joaquin, as referenced in the **Site Location and Description** section of this report. The sites were previously the subject of investigations and code enforcement for illegal dumping. A further explanation of the investigations and code enforcement will be detailed in the **Previous Investigation** section of this Work Plan.

## **1.3. Project Purpose**

The objective of the investigation is to provide site data that will allow for the determination and possible requirement of additional cover or reconfiguration of the waste that may be required to protect public health and safety. The site investigation may also be used to update current property records with respect to delineation of the disposal site footprint. The site data will include a characterization of the horizontal and vertical extent of the disposal area based on an intrusive investigation using direct-push equipment and constituent concentration data from analysis of waste samples.

## **1.4. Responsible Agency**

The CIWMB will be responsible for preparing the site investigation and sampling plan, coordinating investigation objectives with the LEA and coordinating the field investigation and sampling activities with CIWMB contractors. CIWMB staff will oversee field investigation activities, preparation and coordination of the site investigation and sampling and analysis final report and providing the report to the County of San Joaquin LEA for further action. CIWMB will also place both the sampling report and site investigation report in Board files and update the site's Solid Waste Information System (SWIS) database.

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## 1.5. Project Organization

The site investigation and sampling and analysis plan and report preparation and coordination will be performed by CIWMB CIA Section Staff. CIA staff will also coordinate and oversee field investigation and sampling activities. CIWMB's Health and Safety Section will be responsible for preparing a site-specific health and safety plan and monitor on-site health and safety issues. As lead on the project, Mr. Glenn K. Young, P.E. may be reached at the California Integrated Waste Management Board 1001 "I" Street, P.O. Box 4025, Sacramento, CA 95812-4025 or by calling (916) 341-6696, FAX: (916) 319-7528. CIWMB's CIA Investigation Consultant, Ninyo & Moore (IWMB Contract IWM-C0130) will subcontract for either a direct-push rig or tracked excavator (Caterpillar 235 or equivalent), with a 40-hr HAZWOPER trained operator and provide a registered geologist for logging borings, trenches and samples for determining the cover thickness and depth of the fill material. Ninyo & Moore will survey sampling locations at the site in accordance with Figure 3 of this sampling and analysis plan and request that Underground Service Alert (USA) provide surveying and marking of site utilities. Surveying, logging and photographing of sampling locations will be performed by CIWMB staff.

CIWMB staff will perform sample packaging, labeling and shipping to the CIWMB contracted laboratory. The sampling containers and laboratory analysis for the soil samples will be through CIWMB Contract IWM-C0140 with ExcelChem Environmental Laboratories, Inc. located at Roseville, CA.

## 1.6. Previous Investigations

The Santa Fe IDS's has been the subject of site investigation and code enforcement for a number of years. A summary of the chronology of the investigations for both the Lane IDS and Lynch IDS is a follow:

### Lynch IDS:

On March 4, 1997 a Notice and Order to Abate Housing and Dangerous Building Violations was posted upon the Lynch IDS property. The owner at the time was Leonard Lynch.

On July 14, 1997, the County was issued an Inspection Warrant and Authorization to Abate for conditions of non-conformity with County Ordinance Code. The abatement was carried out and completed between July 14, 1997 and August 11, 1997.

On April 22, 1998 the subject property was inspected by the Environmental Health Division, County of San Joaquin, and found to violate disposal and storage regulations under the Public Resources Code, Health and Safety Code, California Code of Regulations, and San Joaquin County Ordinance. As a result the CIWMB was contacted and conducted a site investigation on June 3, 1998. Subsequently, the CIWMB submitted a Solid Waste Cleanup Program – AB 2136 Site Investigation Report, to the San Joaquin Environmental Health Division on June 26, 1998.

On July 24, 1998, the Environmental Health Division sent a letter to the current owner, Delta Funding Limited, c/o Cal State Home Loans, P.O. Box 7636, Stockton, CA 95207. The letter contained an order to cease and desist any further unauthorized disposal of solid waste upon the property.

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On June 26, 1998, the Environmental Health Division received a report from the Escalon Consolidated Fire Protection District noting the occurrence of a fire on June 6, 1998 at the subject site.

On June 26, 1998, it was determined that the site is part of the former Snyder Sanitary Dump Site.

On February 9 1998 and May 10, 1999 letters from the Environmental Health Division to a representative of the current property owner were sent requesting that a work plan to remove waste from the property within specified time frames be submitted to the Environmental Health Division.

To date no response has been received from the property owner or its representative.

On April 4, 2000, a Notice and Order was issued to Delta Funding, current property owner, to cease and desist any further unauthorized disposal of solid/hazardous waste, remove all unauthorized solid/hazardous waste from the subject property and to submit a detailed plan and schedule for compliance with cited violations.

#### Lane IDS

In October 1977, the San Joaquin Public Health Services, Environmental Health Division was informed of the issuance of a Cease and Desist letter mailed to Bill Lane from the Community Development Department. The letter cited violations being committed on the subject property.

On November 2, 1977, the Environmental Health Division confirmed the violations observed as construction debris, asphalt, concrete, and lumber being stored on the property.

Further investigation and observation from November 1977 through December 1977 indicates that compliance with the Environmental Health Divisions requirements had been met. The lot had been leveled and debris burned.

On May 14, 1990, the Environmental Health Division inspected the subject property and observed household garbage, furniture, appliances, construction and demolition debris, carpeting and miscellaneous material.

From May 1990 into January 1991, the investigation continued.

On January 4, 1991, the "responsible party", Bill Lane was instructed by the Districts Attorney Office to remove all hazardous waste and refuse from the subject property.

On October 18, 1993 it was determined that nothing had been done on the property and the case had been bankrupted. The investigation continued through 1995, with violations of solid waste disposal being cited during annual inspections.

On May 27, 1998 the Environmental Health Division, via phone, contacted the CIWMB requesting assistance.

On June 3, 1998 the CIWMB inspected the subject site and provided a copy of the subsequent report and recommendations for remediation to the Environmental Health Division. As a result



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the San Joaquin County Council was informed and a letter to the responsible party, Bill Lane was written, which detailed the violations and that the violations need to be corrected immediately. The investigation continued by site visits and contact with the responsible party and his legal counsel, and San Joaquin County Council, included in the investigation was a report from the Escalon Consolidated Fire Department, which cited a fire investigation at the subject site.

On April 1, 1999, a Notice and Order was issued to Bill Lane, owner of the subject property, to cease and desist any further unauthorized disposal of solid/hazardous waste, remove all unauthorized solid/hazardous waste from the subject property and to submit a detailed plan and schedule for compliance with cited violations.

The Beard and Waller properties have had no previous investigations.

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## 2. Project Objective

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### 2.1. Data Collection

Either direct push equipment or a tracked excavator will be used to conduct the site investigation to determine: 1) the thickness of the cover, 2) the horizontal and vertical extents of the disposal site, 3) chemical and physical characterization of the fill material for comparison to regulatory thresholds and 4) landfill gas screening and sampling and analysis to determine if gas migration is an issue. Sampling will be conducted under the California Code of Regulations, Title 22, section 66261.10 et seq. for characterizing hazardous waste. The CIWMB will use regulatory limits established from the California Department of Toxic and Substance Control and federal levels for evaluating the soil/ash. Detailed analytical procedures are specified in section 3.9 of this plan. Since a portion of the burn-ash may need to be disposed of to a municipal solid waste landfill under clean-closure or waste reconfiguration remedial alternatives, it will be necessary to determine if the soil-ash is considered hazardous for the purpose of handling and disposition. The data from these procedures will be used to identify lead concentrations in surface soils and subsurface burn-ash.

### 2.2. Project Tasks

During the investigation of the Santa Fe Road site a sampling location reference grid will be established and tied to an established benchmark at the site. Relocation of planned sampling locations may be performed and the location referenced to the reference grid. Sampling at a location will entail using either direct-push equipment, e.g. Geoprobe, which will drive a sampling tool down to native soil beneath the old fill, or a tracked excavator to perform trenching through the cover and waste down to native soil (expected to be the former gravel pit bottom).

Under the authoritative sampling protocol, the CIWMB field engineer may change individual sampling locations based on site-specific field conditions (including unforeseen obstructions, visible signs of contaminated soils or other factors). CIWMB anticipates that approximately 30 sampling locations will be required to adequately define the horizontal and vertical extents of the fill and cover thickness (reference figure 6). Soil samples will be screened using a GMI 422 Gas Surveyor instrument and also screened for radioactivity using portable radiation detection equipment and then sent to a State of California certified hazardous waste laboratory for analysis. The trench or hole created by either the direct push sampling equipment or tracked excavator will be screened using a GMI 422 Gas Surveyor instrument capable of measuring concentrations of methane, hydrogen sulfide, carbon dioxide, oxygen and carbon monoxide. The sampling holes will be filled with native soil and bentonite. Estimated date of sampling activities are scheduled to occur the week of **August 12, 2002**, which is dependant upon receipt of authorization for site access from the San Joaquin County Local Enforcement Agency.

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## 2.3. Expected Data

Chemical constituent concentration data obtained during this investigation will be evaluated to determine if additional sampling is necessary. Additional sampling may be performed if it is found that specific constituent levels exceed hazardous levels specified in 22 CCR, e.g. STLC for Lead is much greater than 5 mg/l. Based on information known about the site the following is expected:

- a) The 60-acre Snyder Dump Site (extents of former gravel mining operations) has 4 separate parcels with varying degrees of cover, grading and drainage. Some parcels have cover (developed parcels) and are graded and others have nominal cover (< 1 foot) and poor grading.
- b) Several parcels are not graded or have been effected by differential settlement
- c) Investigation trenches and spoils exist on several parcels
- d) Some of the parcels have illegally disposed of waste adjacent to the railroad embankment (Lane & Lynch properties)
- e) Waste constituents may contain residual concentrations of heavy metals from the burning of solid waste. Metals detected most likely include lead, copper, nickel, zinc and chrome. Iron and aluminum also may be present.
- f) Although the site was closed in the 1960s, landfill gas may be present in concentrations exceeding regulatory thresholds (5%).
- g) USGS Topographic lines show that the difference in elevation between Santa Fe Road (110 ft) and the bottom of the gravel pit (95 ft) was approximately 15 ft.
- h) Cover material may be approximately unknown in thickness
- i) Reconfigured waste limits approximate those shown in TBD.

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## 3. Sampling Plan

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This sampling plan is intended to document the procedural and analytical requirements for this and any subsequent sampling events performed to collect soil and waste samples and to characterize areas of potential contamination from the Santa Fe Road Disposal Site. This plan was compiled after reviewing the US Environmental Protection Agency's, Region 9, guidance document "Instructions for the One-time Sampling Event Sampling and Analysis Plan" dated March 1998.

### 3.1. Sampling Methodology

Discrete sampling will be used to assess the burn ash and surrounding soils. The sampling will be conducted by using either direct-push equipment or a tracked excavator to sample locations shown on Figure 3. Authoritative protocol may be used to allow the investigator the flexibility to move sampling locations, as necessary, to accommodate unforeseen field conditions. The following outline describes the proposed sampling:

- Direct push equipment will drive sampling tool down to approximately 25 feet (or until contact between waste and native is encountered) to characterize the cover thickness and waste thickness. Burn ash and soil samples will be cut from acetate tubing used to line the sampling tool and capped. A total of **60 waste/ash** samples will be collected (two sample per location). One sample will be used as a discrete sample which will be analyzed for CAM 5 (lead, nickel, cadmium, chrome and zinc) the other sample used for compositing with others from a specified area.
- Areas will be defined for compositing samples for more extensive analysis. A total of **9 composite samples** are proposed.

Each direct-push sample or trench will be classified and logged **by the Ninyo & Moore registered geologist and** samples will be collected by visually identifying debris through the clear acetate liner of the sampling tool and then carefully cutting two 6-inch samples from the tube and capped. Once capped, the samples will be sealed, labeled and logged and packaged for shipping back to CIWMB laboratory contractor, ExcelChem.

Reusable sampling equipment will be decontaminated between each sampling event by the CIWMB consultant or their subcontractor. Decontamination will follow the procedures outlined in Section 3.5 of this sampling plan. **Personnel who collect samples will be required to change their gloves between each sampling event.**

### 3.2. Sampling Equipment

The following equipment will be necessary to perform the sampling

- |                                    |                              |
|------------------------------------|------------------------------|
| ▪ Direct Push Equipment            | ▪ Field log book             |
| ▪ Geoprobe Acetate Sampling Liners | ▪ Survey laths               |
| ▪ GMI 422 Gas Surveyor Instrument  | ▪ First aid kit and eye wash |

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- Plastic end caps for acetate tubing
  - Chain of custody forms and custody seals
  - Decontamination equipment (2 ½ -gallon sprayer, non-phosphate detergent, disposable brush, paper towels, cotton towels, polyethylene sheeting)
  - Spray paint for marking sample locations
  - Mailing labels and markers
  - Cooler and ice or blue ice
  - Packing and duct tape

### 3.3. Sampling Procedures

Burn-ash and soil samples will be collected using direct push equipment. At each sample location direct-push equipment will be used to drive the sampling tool through the cover and waste into native soil beneath the fill.

Subsurface waste and soil samples will be collected by visually identifying debris through the clear acetate liner of the sampling tool and cutting out a six-inch section and capping the ends with plastic cap plugs. Upon completion of sampling at a location the hole will be screened using a GMI 422 Gas Surveyor and a measurement taken for CH<sub>4</sub>, CO<sub>2</sub>, H<sub>2</sub>S, CO and O<sub>2</sub>. The hole will then be filled with native soil and bentonite.

After each sample is collected it will be placed in a laboratory-supplied container, labeled, logged on the chain-of-custody document, screened for radioactivity, sealed, and stored in an ice chest that is cooled to 4 degrees Fahrenheit. The coolers will be shipped to ExcelChem via overnight Federal Express shipment.

### 3.4. Sample Locations

Although sampling locations are proposed in Figure 6, exact soil sampling locations will be determined in the field based on accessibility, the presence of unforeseen impedances or other factors. Final soil sample locations will be recorded in the field logbook and staked in the field when sampling is completed. A survey crew will locate each sampling location on the final site map. The map will be provided in a final site investigation and sampling and analysis report.

### 3.5. Decontamination Procedures

All equipment that comes into contact with potentially contaminated soil/burn ash will be decontaminated in a predesignated area. Disposable equipment intended for one-time use will not be decontaminated, but will be packaged for appropriate disposal. Decontamination will occur prior to and after each use of a piece of equipment. All sampling devices used, including trowels and augers, will be decontaminated by CIWMB staff.

The following decontamination procedures for primary contaminant, inorganic (metals):

1. Non-phosphate detergent and tap-water (bottled water) wash, using a brush if necessary
2. Tap-water rinse
3. 0.1 N nitric acid rinse
4. Deionized/distilled water rinse 2x



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## 3.6. Sample Containers and Preservation

Pre-cleaned containers will be supplied by the laboratory and will not be rinsed prior to sample collection. No preservative will be added to the containers.

## 3.7. Disposal of Residual Materials

In the process of collecting environmental samples at the Santa Fe Road Disposal Site, the CIWMB sampling team will generate different types of potentially contaminated investigation-derived waste (IDW) that may include:

- Used personal protective equipment (PPE)
- Disposable sampling equipment
- Decontamination fluids

The U.S. EPA's National Contingency Plan requires management of IDW generated during sampling comply with all applicable or relevant and appropriate requirements to the extent practicable. The IDW will contain minor residual amount of the soil/burn ash. These wastes are not considered hazardous and will be disposed of at a municipal landfill. Used PPE and disposable equipment will be double bagged and placed in municipal refuse dumpster. Any PPE and disposable equipment that is to be disposed of which can still be used will be rendered inoperable before disposal. Decontamination fluids that will be generated during sampling will consist of nitric acid, deionized water, residual contaminants, and water with non-phosphate detergent. The volume and concentration of the decontamination fluid will be sufficiently low to allow disposal at the site or sampling area. This minimal volume of decontamination fluid will be disposed of to the sanitary sewer system.

If hazardous or radioactive material are found during sampling screening activities, appropriate level of notification and response procedures will be implemented in accordance with the Site Specific Health and Safety Plan.

## 3.8. Analytes of Concern

Analytes of concern at this site are residual heavy metals from burning solid waste and any unburned organic materials left in the soil matrix.

## 3.9. Analytical Procedures

Each sample container's headspace will be tested using the GMI 422 Gas Surveyor. After field screening the sample containers will be capped, sealed and labeled (see packaging procedures), and sent to CIWMB's contract laboratory, ExcelChem, where composite samples will be analyzed for CAM 17 metals, pH, reactivity, ignitability, TPH BTEX/Diesel (EPA Method 602/8020/8015m), organochlorine pesticides/PCBs (EPA Method 608/8080) and WET (to determine if STLC is exceeded). Discrete samples will be analyzed for California Assessment Manual (CAM) 5 metals by the Total Test procedure using EPA Method 6010/7000. Samples with the highest concentrations of lead will also be analyzed for CAM-5 metals using the Waste Extraction Test (WET) procedure (EPA Method 6010) to determine if Soluble Threshold Limit Concentration (STLC) limits are exceeded. If

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the WET results for any other metal not in the CAM-5 analysis exceed by 10 times the STLC regulatory level, a separate WET analysis for that metal will be performed. Selected burn ash samples will also be tested for semivolatiles (EPA method 8270C).

### 3.10. Anticipated Cost

Based on discussions with ExcelChem Analytical Laboratory the following sampling costs are presented:

EPA METHOD	PARAMETER	UNIT COST	# SAMPLES	COST
6010	CAM 5 Metals	\$60	30	\$1800
6010/7471	CAM 17 Metals	\$210	9	\$1890
22CCR WET	STLC (>10X)	\$60	9	\$540
608/8080	O-pest/PCBs	\$100	9	\$900
602/8020/8015m	TPH/BTEX/d	\$100	9	\$900
625/8270	Semi-Volatiles	\$300	9	\$2700
8280A	Dioxins	\$1100	3	\$3300
4035	PAH	\$300	3	\$900
			<b>Total</b>	<b>\$12930</b>

### 3.11. Field Quality Control

One field duplicate sample will be collected simultaneously with a standard sample from the same source under identical conditions into a separate sample container. The duplicated sample is treated independently of its counterpart in order to assess laboratory performance through comparison of the results.

The duplicate samples will be collected at a random location that demonstrates elevated levels of metals based on field screening results. Sufficient soil will be collected from the sample location to prepare a primary and duplicate sample from a single batch of soil. The soil sample will be homogenized with a trowel in a sample-dedicated one-gallon disposable pail or a decontaminated stainless steel mixing bowl, and then transferred to each sample container for both regular and duplicate sample analyses.

### 3.12. Laboratory Quality Control

The analytical laboratory will perform Quality Control (QC). The QC will include project specific QC, method blank results, laboratory control spike, and matrix spike results.

1. Project Specific QC – No project specific QC has been requested by the CIWMB
2. Method Blank Results – A method blank is a laboratory-generated sample that assesses the degree to which laboratory operations and procedures cause false-positive analytical results for the CIWMB samples. The method blank results associated with the samples will be

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included with the analytical results.

3. Laboratory Control Spike – A Laboratory Control Spike (LCS) is a sample that is spiked with known analyte concentrations, and analyzed at approximately 10 percent of the sample load in order to establish method-specific control limits. The LCS results associated with CIWMB samples will be attached on the LCS and LCS Duplicated Analysis Report.
4. Matrix Spike Results – A matrix spike is a sample that is spiked with known analyte concentrations and analyzed at approximately 10 percent of the sample load in order to establish method-specific control limits. The matrix spike results associated with CIWMB samples will be attached on the Matrix Spike and Matrix Spike Duplicate Analysis Report.
5. Accuracy – Accuracy will be measured by percent recovery as defined by:

$$\% \text{ Recovery} = \frac{(\text{measured concentration}) \times 100}{(\text{actual concentration})}$$

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## 4. Documenting and Reporting

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### 4.1. Field Notes

A field logbook will be used to document the vital project and sample information. At a minimum, the following sample information will be recorded:

- Sample location and description
- Site or sample area sketch showing sample location and measured distances
- Sampler's name(s)
- Date and time of sample collection
- Designation of sample as composite or grab
- Type of sample (soil, sediment or water)
- Type of sampling equipment used
- Field instrument reading, if applicable
- Field observations and details related to analysis or integrity of samples (e.g., weather conditions, noticeable odors, colors, etc.)
- Preliminary sample descriptions
- Sample preservation
- Sample identification numbers and explanatory code
- Name of recipient laboratory

In addition to the sampling information, the following specific information will also be recorded in the logbook:

- Team members and their responsibilities
- Time of arrival and departure
- Deviations from the sampling plan
- Level of health and safety protection

### 4.2. Photographs

Photographs will be taken at the sampling location and at surrounding areas. The photos will verify information entered in the field logbook. Each photo taken will be written in the logbook with the approximate time, date, and location.

### 4.3. Labeling

All samples collected will be labeled in a clear and precise way for proper identification for tracking in the laboratory. Each sample will reference the sample date, the type of sample (S – surface; B – subsurface), and the sample point identification as shown on the pin flag.

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#### 4.4. Chain-of-Custody

A chain-of-custody record will accompany all sample shipments. Shipped samples will have a custody seal placed across the lid of each sample container. All custody seals will be signed and dated.

#### 4.5. Packaging and Shipment

All sample containers will be placed in a strong-outside shipping container and will have the drain plug sealed, if applicable, to prevent melted ice from leaking out of the cooler. If ice is used to cool the samples, the ice will be packed in a double zip-lock bag. Special care will be provided to secure and prevent damage to the sample containers.

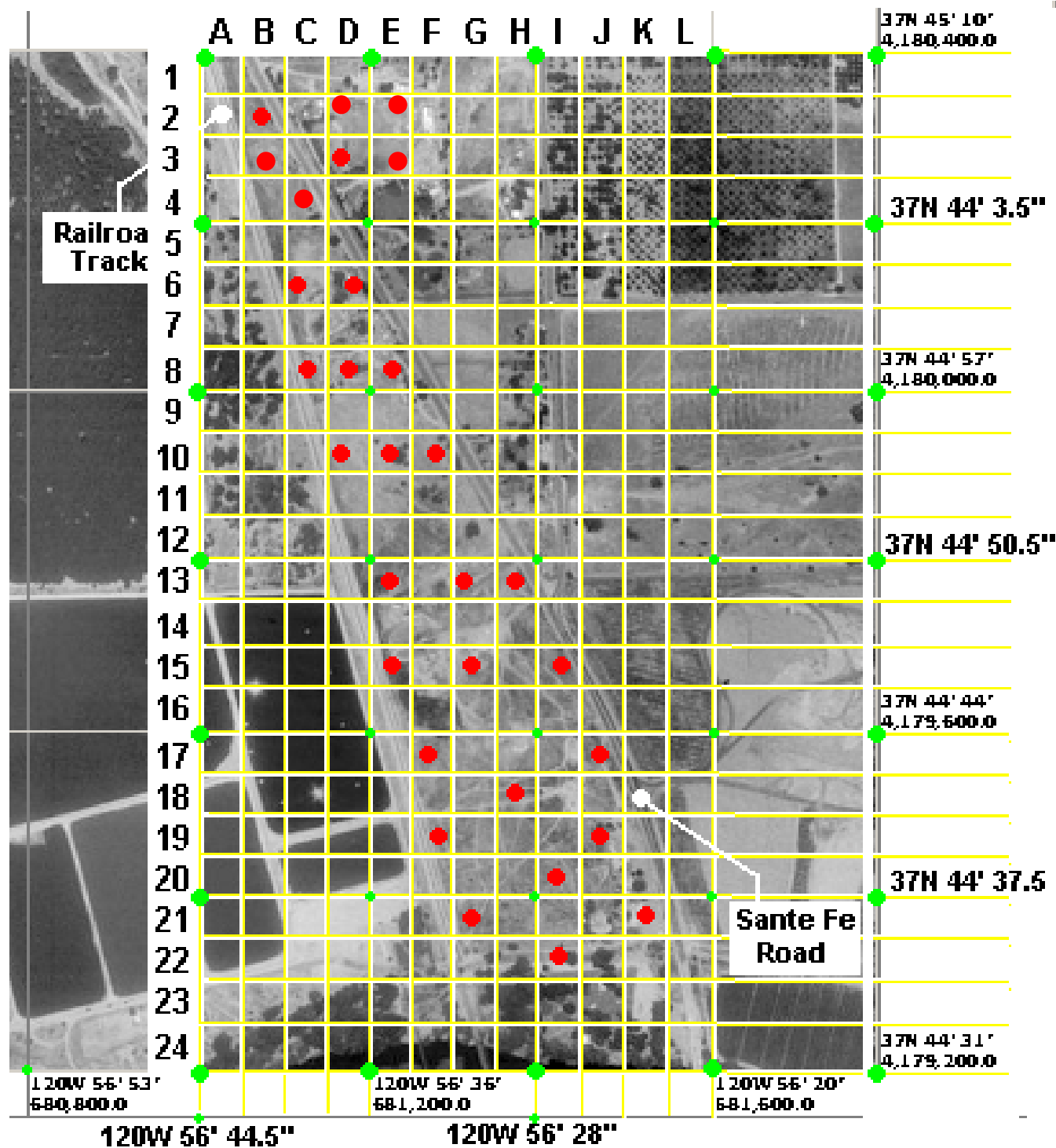
#### 4.6. Reporting

Once the analytical results are received and evaluated, CIWMB will prepare a sampling report describing the nature of the waste and discuss the analytical results. The CIWMB anticipates submitting the sampling report to the LEA within 30 days after receipt of the analytical results.



FIGURE 6. Santa Fe Road Disposal Site Sampling Location Map

## Sante Fe Road IDS/Riverbank Disposal Site



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